

Amendments to the Specification:

Please replace the paragraph beginning at page 5, line 3 with the following amended paragraph:

B1 As shown in FIG. 1, a system for obtaining and merging images 11 includes a computer 12, a digital camera 20 to capture digital images 11 and load them onto the computer 12, a display 14 for displaying the images and a printer 22 for printing them. Each of the images 11 depict overlapping segments of a view that is common to all of them and the computer 12 merges the images to create a panoramic image of the view. For example, each of the images 11 may represent a segment of the skyline of a city and the computer 12 may merge the images to form a panoramic image of the entire skyline. In forming the panoramic images, the images 11 are positioned relative to each other to form a seamless continuous image. For example, some of the images 11 may be positioned side-by-side, vertically, ~~while~~, or diagonally relative to each other.

Please replace the paragraph beginning at page 8, line 2 with the following amended paragraph:

B2 As shown in FIGS. 6A and 6B, the positioning module 50 uses a two-image positioner ^{[[60]]} 63 to determine how much a first image 80a needs to be moved relative to a second image 80b so that a certain object depicted in both of the images 80a, 80b has its depiction in the second image 80a on top of its depiction in the first image 80b. In FIG. 6A, the image 80b must be moved 68 pixels to the right and 2 pixels upwards so that a branch 82 which is depicted in both image 80a, 80b has its depiction in the second image 80b on top of its depiction in the first image 80a. This ensures that the two images 80a, 80b are positioned so that the images 80a, 80b continue into each other seamlessly.

Please replace the paragraph beginning at page 8, line 10 with the following amended paragraph:

B3 The two-image positioner ^{[[60]]} 63 determines the relative position ("offset") of the two images, for example, based on the cross-spectrum method described in "Direct Estimation of

Displacement Histograms," proceedings of the OSA meeting on image understanding and machine vision, June 1989, Bernd Girod and David Kuo ("Girod"), the disclosure of which is incorporated by reference in this specification. The Girod method returns a probability density function (see FIG. 3 of Girod) that has a peak at the value of the relative displacement.

Two-image positioner ~~[[60]]~~ 63 determines the relative position by first finding the location of the peak, which gives the magnitude of the relative position. Two-image positioner ~~60~~ 63 also finds the highest value of the probability density function that is outside a five-pixel radius of the peak, and computes a confidence value in the relative position ~~by~~ based on the ratio of the highest value outside the five-pixel radius and the value of the peak.

Please replace the paragraph beginning at page 9, line 11 with the following amended paragraph:

The actual relative position of the first image ~~relative~~ 80a relative to the second image 80b yields the greatest value for the correlation, q . Relative positions that yield very small overlapping segments are discarded because the correlation for the small segments is likely to yield false positive results.

Please replace the paragraph beginning at page ~~9~~ ¹¹, line ~~11~~ ¹ with the following amended paragraph:

The multiple-image positioner 62 then checks (724) whether the current image is the last image in the positioned list. If it is not, the multiple-image positioner 62 sets (726) the current image to be the next image in the positioned list and repeats the processes (714-724) for the new current image. Thus, the multiple-image positioner 62 and the two-image positioner ~~[[60]]~~ 63 determine the relative positions of the unpositioned image relative to the positioned images while keeping track of a confidence value for the relative positions.

Please replace the paragraph beginning at page 13, line 29 with the following amended paragraph:

26 The multiple-image corrector 66 creates (804) a list of images whose perspective distortion has been corrected ("list of corrected images") that includes only the centermost image. The multiple-image corrector 66 also creates (806) a list of images whose perspective distortion has not been corrected ("list of uncorrected images") that includes all of the images 80a, 80b, 80d-80f (FIG. 6B). The multiple-image corrector 66 then initializes the correction process by setting (808) the value of the maximum overlap area ("max_overlap_area") to zero, the image from the corrected list that will be used in perspective correction ("selected_warped") to be undefined, and the image whose perspective is to be corrected ("selected_unwarped") to also be undefined.

Please replace the paragraph beginning at page 19, line 6 with the following amended paragraph:

27 As shown in FIG. 12, image blender 58 (FIG. 1) then sets (1206) a visible property of the pixels of all the images to indicate that all the pixels of all the images start as being visible. The stitching software then sets (1208) the current image to the first image 80a (FIG. [[4A]] 6A) and proceeds to determine the visible area of each of the images as described below.

Please replace the paragraph beginning at page 19, line 10 with the following amended paragraph:

28 The image blender 58 sets (1210) the current image to be the next image 80b after the current image 80a and sets the reference image to be the first image 80a. Thereby leaving all the pixels of the first image visible. Although all the pixels of the first image are set visible, some of the pixels of the first image may be obstructed or masked out by visible portions of subsequent images, as described later.

Please replace the paragraph beginning at page 19, line 15 with the following amended paragraph:

29 The dividing-line determiner 54 (FIG. 1) determines (1212) an outline 85 (FIG. [[4F]] 6F) of a composite image formed by aligning the current image and the reference image 80a (as previously described with reference to FIG. [[4A]] 6A). The dividing-line determiner 54 also determines a pair of points 87a, 87b where the outlines of the aligned images intersect, thereby defining (1214) a line 89 that joins the points 87a, 87b and divides (1216) the panoramic outline 85 into two sections 81, 83 (1216). If the outlines of the aligned images intersect at more than two points, the dividing-line determiner 54 selects the two intersection points that are furthest apart from each other to define the dividing line 89. The dividing-line determiner 54 then determines (1218) which one of the two sections 81, 83 has less of the current image 80b that is not overlapped by the reference image 80a and sets (1220) that section 87a of the current image 80b to be invisible. In the example of FIG. [[4F]] 6F, the section 83 has none of the current image that is not overlapped by the first image 80a. Consequently, the portions of the image profile 85 contained within the section 84 are set invisible, leaving the hashed section 82 of the image 80b visible.

Please replace the paragraph beginning at page 20, line 19 with the following amended paragraph:

310 If there are no more images after the current image, the image blender 58 overlaps (1230) the images 80a-80f based on the masking value to create the panoramic image 94 (FIG. [[4E]] 6E). The section 87a 81 of the second image 80b with a mask value of 1 is first composited on the first image, thereby obstructing the part of the first image that is to the right of the dividing line 89. The portions of the third image 80c with a mask value of [[90]] 1 are then composited on the composite image from the first 80a and second 80b image to create another image, and so on, until the composite image 94 is created. Thus, image stitching software merges images 80a-80f depicting sections of a scene to create a panoramic image of the whole scene.

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Please replace the paragraph beginning at page 20, line 28 with the following amended paragraph:

B1
A number of embodiments of the invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. For example, images 80a-80f to be blended may be obtained ~~from~~ from a scanned image. The positioning module may determine the relative positions of segments depicted in two images by prompting the user to use ~~[[the]]~~ a pointing device ~~[[24]]~~ to click on an object, such as the top left corner of the doorway, that is depicted in both of the images and determining the relative positions based on the positions that the user clicks on.